

(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property
Organization
International Bureau



(43) International Publication Date
29 July 2004 (29.07.2004)

PCT

(10) International Publication Number
WO 2004/062793 A1

(51) International Patent Classification⁷: B01J 19/12,
C10L 5/00, F23G 5/00, H05B 6/80, H05H 1/46

(21) International Application Number:
PCT/NZ2003/000276

(22) International Filing Date:
16 December 2003 (16.12.2003)

(25) Filing Language: English

(26) Publication Language: English

(30) Priority Data:
523665 15 January 2003 (15.01.2003) NZ

(71) Applicant and

(72) Inventor: GUPTA, Rajeev, Prasad [IN/NZ]; 11 / 16A,
Colson Street, Avalon, Lower Hutt, 6009 Wellington (NZ).

(81) Designated States (national): AE, AG, AL, AM, AT, AU,
AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR,

CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD,
GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR,
KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN,
MW, MX, MZ, NI, NO, NZ, OM, PG, PH, PL, PT, RO, RU,
SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA,
UG, US, UZ, VC, VN, YU, ZA, ZM, ZW.

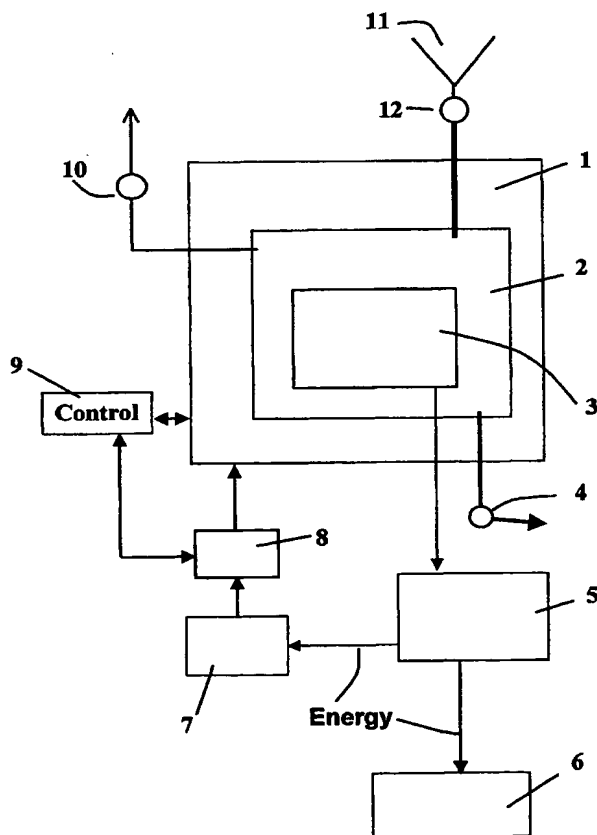
(84) Designated States (regional): ARIPO patent (BW, GH,
GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZM, ZW),
Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM),
European patent (AT, BE, BG, CH, CY, CZ, DE, DK, EE,
ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PT, RO, SE,
SI, SK, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA,
GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declarations under Rule 4.17:

- as to the identity of the inventor (Rule 4.17(i)) for all designations
- as to applicant's entitlement to apply for and be granted a patent (Rule 4.17(ii)) for all designations

[Continued on next page]

(54) Title: METHOD AND APPARATUS USING MICROWAVE ENERGY



(57) Abstract: The process generates energy from organic material utilizing microwaves. The waste from food item is dried and further heated under temperature control to convert it into a renewable source of energy. Enclosed in a glass chamber (2) it is then exposed to microwave energy. Apparatus comprises a microwave oven (1), a heat exchanger (3) and energy extraction systems (5) and (6). The microwave absorption creates an ionized hot air atmosphere of high-energy Plasma. This new process for hot plasma generates heat, pressure and electromotive energy, which can be converted by a heat exchanger; a microwave ignited internal-combustion engine or a Magneto-Hydrodynamic (MHD) system, to the useful form of mechanical or electrical energy. The process incorporates a method for plasma confinement to harness its energy. Suitable feedback-control (7) makes the process self-sustaining with net gain in the output energy. Energy efficiency of the process measures the nutritional value of food item used.



- *as to the applicant's entitlement to claim the priority of the earlier application (Rule 4.17(iii)) for all designations*
- *of inventorship (Rule 4.17(iv)) for US only*

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

Published:

- *with international search report*